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Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

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Bence Lehman

Commissioner of Patents and Trademarks

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Attorney



US005781043A

United States Patent [19]

Slemmer

[11] Patent Number: **5,781,043**[45] Date of Patent: **Jul. 14, 1998**[54] **DIRECT CURRENT SUM BANDGAP VOLTAGE COMPARATOR**[75] Inventor: **William Carl Slemmer**, Dallas, Tex.[73] Assignee: **SGS-Thomson Microelectronics, Inc.**,
Carrollton, Tex.[21] Appl. No.: **932,930**[22] Filed: **Sep. 18, 1997****Related U.S. Application Data**[63] Continuation of Ser. No. 606,233, Feb. 23, 1996, abandoned,
which is a continuation of Ser. No. 56,301, Apr. 30, 1993,
abandoned.[51] Int. Cl.⁶ **H03K 5/22**[52] U.S. Cl. **327/78; 327/77; 327/361;**
327/539; 327/541; 327/542; 327/543[58] Field of Search **327/74, 77, 78,**
327/530, 538, 540, 541, 543, 545, 546,
361, 539, 542[56] **References Cited****U.S. PATENT DOCUMENTS**4,473,758 9/1984 Huntington 327/537
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5,373,227 12/1994 Keeth 327/541*Primary Examiner—Terry Cunningham**Attorney, Agent, or Firm—Theodore E. Galanthay; Kenneth*
C. Hill; Lisa K. Jorgenson[57] **ABSTRACT**

A direct current sum bandgap voltage comparator for detecting voltage changes in a power supply. The direct current sum bandgap voltage comparator includes a summing node, current sources connected to the summing node and the power supply, and an indicator circuit connected to the summing node. Each current source supplies a current to the summing node wherein the summing node voltage level is responsive to the currents supplied. The indicator circuit is responsive to changes in the summing node voltage level and generates at an output a logical signal at one state when the summing node voltage level is greater than a predetermined value and generates the logical signal at the output at another state when the summing node voltage level is less than the predetermined value, the predetermined value corresponding to a preselected power supply voltage.

23 Claims, 2 Drawing Sheets